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Application Serial No.10/533,197
Reply to Office Action of December 10, 2008

PATENT
Docket: CU-4184

Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

Listing of claims:

1-9 (cancelled)

10. (currently amended) A hydraulic mechanism comprising a cam and a cylinder block suitable for rotating relative to each other about an axis of rotation, the cylinder block having a plurality of cylinders connected via cylinder ducts to communication orifices disposed in a communication face of the cylinder block, pistons slidably mounted in the cylinders being suitable for co-operating with the cam, the mechanism further comprising a fluid distributor, constrained in rotation with the cam about the axis of rotation, and having a distribution face which is provided with distribution orifices comprising orifices suitable for being connected to a feed duct and orifices suitable for being connected to a discharge duct, said distribution face and said communication face facing each other so as to put the communication orifices into communication with the distribution orifices as the cylinder block and the distributor rotate relative to each other, at least certain cylinders being connected to at least two communication orifices spaced apart angularly so that, when a first communication orifice of such a cylinder communicates with a first distribution orifice connected to one of the feed duct and the discharge duct, a second communication orifice of the same cylinder communicates with a second distribution orifice connected to said one of the feed duct and the discharge duct whereby fluid feed and discharge of such a cylinder occurs via said first and second orifices at the same time.

11. (previously presented) A hydraulic mechanism according to claim 10, wherein the cam has n cam lobes, n being a positive integer and an angular spacing between two communication orifices of the same cylinder is substantially equal to a multiple of $360^\circ/n$.

12. (previously presented) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices which are situated in an area of the communication face that is defined by the projection, onto said communication face and parallel to the axis of rotation, of two lines of the cylinder in

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question that are parallel to the cylinder axis and are opposite each other on a diametrical plane of said cylinder that is perpendicular to said axis.

13. (previously presented) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices which are disposed symmetrically about a plane defined by an axis of the cylinder in question and by the axis of rotation.

14. (previously presented) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices, one of which intersects a plane defined by an axis of a cylinder in question and by the axis of rotation.

15. (previously presented) A hydraulic mechanism according to claim 10, wherein each cylinder is connected to two communication orifices.

16. (previously presented) A hydraulic mechanism according to claim 15, wherein an angular spacing between the two communication orifices of a cylinder is the same for all of the cylinders.

17. (previously presented) A hydraulic mechanism according to claim 16, wherein the cam has n cam lobes, n being a positive integer and the angular spacing is equal to $360^\circ/n$.

18. (previously presented) A hydraulic mechanism according to claim 10, wherein the cam has a plurality of cam lobes, each of which comprises a rising ramp and a falling ramp, each of which is associated with a respective distribution orifice, a cam lobe being considered to be active when the distribution orifice associated with the rising ramp of said cam lobe is hydraulically connected to the feed duct and when the distribution orifice associated with the falling ramp of said cam lobe is hydraulically connected to the discharge duct, the hydraulic mechanism having a large active operating cubic capacity in which all of the cam lobes are active, and a small active operating capacity in which only some of the cam lobes are active, and wherein the cam lobes that are active in the small active operating cubic capacity are spaced at regular angular intervals.

19. (new) A hydraulic mechanism comprising a cam and a cylinder block suitable for

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rotating relative to each other about an axis of rotation, wherein the cam has n cam lobes, n being a positive integer and an angular spacing between two communication orifices of the same cylinder is substantially equal to a multiple of $360^\circ/n$, the cylinder block having a plurality of cylinders connected via cylinder ducts to communication orifices disposed in a communication face of the cylinder block, pistons slidably mounted in the cylinders being suitable for co-operating with the cam, the mechanism further comprising a fluid distributor, constrained in rotation with the cam about the axis of rotation, and having a distribution face which is provided with distribution orifices comprising orifices suitable for being connected to a feed duct and orifices suitable for being connected to a discharge duct, said distribution face and said communication face facing each other so as to put the communication orifices into communication with the distribution orifices as the cylinder block and the distributor rotate relative to each other, at least certain cylinders being connected to at least two communication orifices spaced apart angularly so that, when a first communication orifice of such a cylinder communicates with a first distribution orifice connected to one of the feed duct and the discharge duct, a second communication orifice of the same cylinder communicates with a second distribution orifice connected to said one of the feed duct and the discharge duct.

20. (new) A hydraulic mechanism according to claim 19, wherein at least one cylinder is connected to two communication orifices which are situated in an area of the communication face that is defined by the projection, onto said communication face and parallel to the axis of rotation, of two lines of the cylinder in question that are parallel to the cylinder axis and are opposite each other on a diametrical plane of said cylinder that is perpendicular to said axis.

21. (new) A hydraulic mechanism according to claim 19, wherein at least one cylinder is connected to two communication orifices which are disposed symmetrically about a plane defined by an axis of the cylinder in question and by the axis of rotation.

22. (new) A hydraulic mechanism according to claim 19, wherein at least one cylinder is connected to two communication orifices, one of which intersects a plane defined by an axis of a cylinder in question and by the axis of rotation.

23. (new) A hydraulic mechanism according to claim 19, wherein each cylinder is

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connected to two communication orifices.

24. (new) A hydraulic mechanism comprising a cam and a cylinder block suitable for rotating relative to each other about an axis of rotation, the cylinder block having a plurality of cylinders connected via cylinder ducts to communication orifices disposed in a communication face of the cylinder block, pistons slidably mounted in the cylinders being suitable for co-operating with the cam, the mechanism further comprising a fluid distributor, constrained in rotation with the cam about the axis of rotation, and having a distribution face which is provided with distribution orifices comprising orifices suitable for being connected to a feed duct and orifices suitable for being connected to a discharge duct, said distribution face and said communication face facing each other so as to put the communication orifices into communication with the distribution orifices as the cylinder block and the distributor rotate relative to each other, at least certain cylinders being connected to at least two communication orifices spaced apart angularly so that, when a first communication orifice of such a cylinder communicates with a first distribution orifice connected to one of the feed duct and the discharge duct, a second communication orifice of the same cylinder communicates with a second distribution orifice connected to said one of the feed duct and the discharge duct, wherein

the cam has a plurality of cam lobes, each of which comprises a rising ramp and a falling ramp, each of which is associated with a respective distribution orifice, a cam lobe being considered to be active when the distribution orifice associated with the rising ramp of said cam lobe is hydraulically connected to the feed duct and when the distribution orifice associated with the falling ramp of said cam lobe is hydraulically connected to the discharge duct, the hydraulic mechanism having a large active operating cubic capacity in which all of the cam lobes are active, and a small active operating capacity in which only some of the cam lobes are active, and wherein the cam lobes that are active in the small active operating cubic capacity are spaced at regular angular intervals.

25. (new) A hydraulic mechanism according to claim 24, wherein the cam has n cam lobes, n being a positive integer and an angular spacing between two communication orifices of the same cylinder is substantially equal to a multiple of $360^\circ/n$.

26. (new) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices which are situated in an area of the

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communication face that is defined by the projection, onto said communication face and parallel to the axis of rotation, of two lines of the cylinder in question that are parallel to the cylinder axis and are opposite each other on a diametrical plane of said cylinder that is perpendicular to said axis.

27. (new) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices which are disposed symmetrically about a plane defined by an axis of the cylinder in question and by the axis of rotation.

28. (new) A hydraulic mechanism according to claim 10, wherein at least one cylinder is connected to two communication orifices, one of which intersects a plane defined by an axis of a cylinder in question and by the axis of rotation.

29. (new) A hydraulic mechanism according to claim 10, wherein each cylinder is connected to two communication orifices.

30. (new) A hydraulic mechanism according to claim 15, wherein an angular spacing between the two communication orifices of a cylinder is the same for all of the cylinders.